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WPI Abstract Accession No. 91-246640/199134 & DE 4006849 C (SCHUSTER...) 22.08.91 (see abstract) WPI Abstract Accession No. 83-735996/198333 & DE 3203947 A (HANESCH) 11.08.83 (see abstract)

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Online: WPI

(54) Improvements in or relating to illuminable indicating devices

(57) A pushbutton switch assembly has a pressel or face plate (10) of metal carrying indicia (12) and braille symbols (14). To facilitate understanding of the indicia (12) and the braille symbols (14), they are embossed in the face plate (10) so that they project and stand proud thereof. The embossed indicia (12) also have slots (22) defining the same symbol as the indicium (12). The translucent material of a body member (16) is moulded to fill the slots (22). When an LED assembly (20) situated at the rear surface of the body member is illuminated, the slots (22) in the indicia (12) are illuminated. This is of great assistance to the partially sighted.

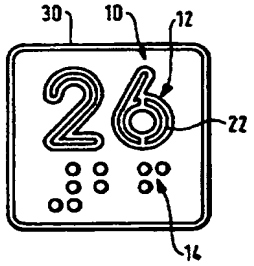

FIG. 1

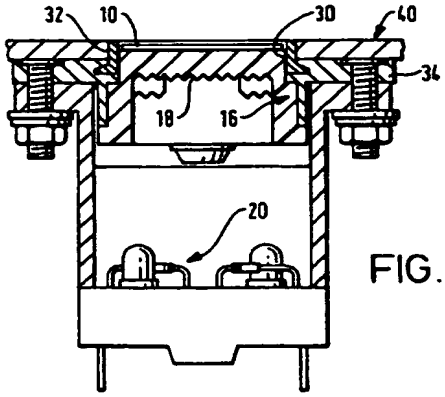

FIG. 3

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At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

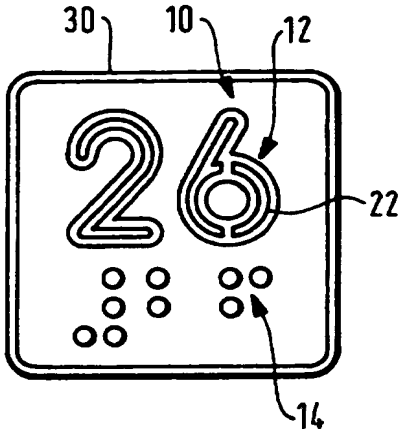

FIG. 1

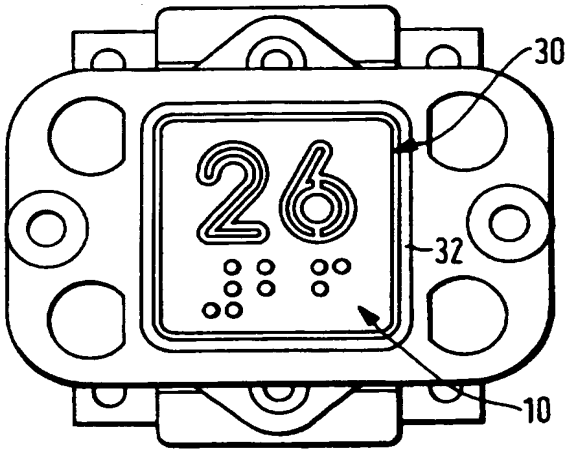

FIG. 2

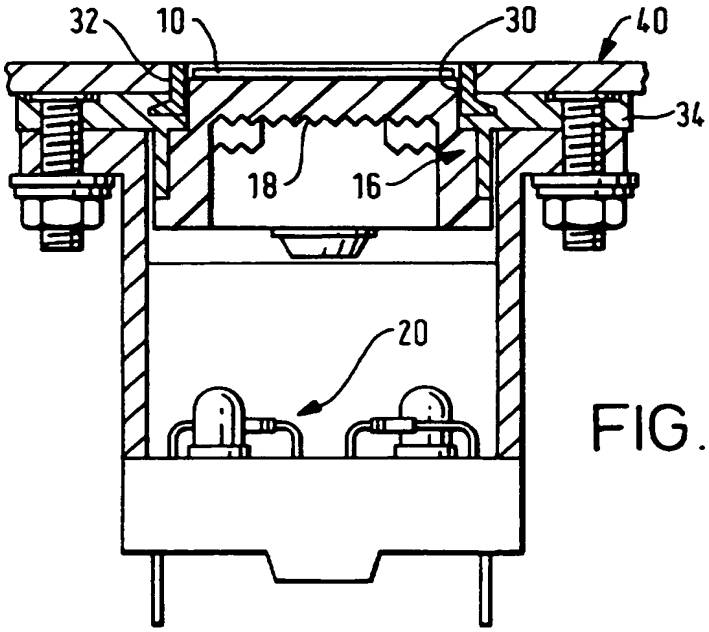

FIG. 3

IMPROVEMENTS IN OR RELATING TO INDICATING DEVICES

The present invention relates to illuminable indicating devices, for example, to pushbuttons or indicators.

Conventionally, the pushbuttons and indicators used in lifts have a metal pressel bearing appropriate indicia. A halo illumination is formed by fixing the pressel onto a body of translucent material which defines a surrounding rim. This rim is selectively illuminated to produce the halo effect.

The embossed indicia on such indicators and pushbuttons are not particularly easy for the partially sighted to see. Braille indications are often now provided for the blind, but these are not useful for the partially sighted. However, any modifications to assist the partially sighted should not compromise the vandal resistant nature of the indicating device.

It is an object of the present invention to provide an illuminable indicating device which is more helpful for the partially sighted but does not compromise the vandal resistant nature of the device.

According to a first aspect of the present invention there is provided a cover unit for an illuminable indicating device, said cover unit comprising a metal face plate affixed to a translucent body member, wherein at least one indicium is formed in said face plate to project with respect thereto, and wherein the metal of the indicium is slotted or gapped, material of said translucent body member being received within the slots or gaps.

In an embodiment of a cover unit of the invention, the material of the translucent body member fills all of the slots or gaps within the indicium so that the outer surface of the indicium is smooth.

Preferably, the slots or gaps in the indicium define the same mark or sign as the indicium.

The slots or gaps may be continuous or interrupted. One line of slots or gaps may be provided, or several lines of slots or gaps may be used.

Preferably, the or each indicium is embossed in the face plate.

Preferably, the translucent body member is shaped to define a translucent rim around the periphery of the face plate.

In a preferred embodiment, the indicia carried by the face plate comprise arrows, letters or numbers. In addition, braille symbols may be embossed on the face plate.

The present invention also extends to an illuminable indicating device comprising a cover unit as defined above.

In one embodiment, the cover unit is fixed in a metal surround to provide an indicator. In an alternative embodiment, the cover unit is incorporated in a pushbutton switch, with the metal face plate forming the pressel of the pushbutton switch.

The present invention also extends to a method of forming a cover unit for an illuminable indicating device, the method comprising the steps of forming at least one projecting indicium in a metal face plate, cutting the indicium to form slots or gaps therein, and then moulding a translucent material to form a translucent body member affixed to the face plate such that the material of the translucent body member is received within said slots or gaps.

In a preferred embodiment, the or each indicium is embossed in the metal face plate.

Preferably, the slots and/or gaps are laser cut in the indicia.

Preferably, the method further comprises the steps of receiving the metal face plate with the slotted or gapped indicia within a mould, and then moulding the translucent material to form the body member.

Embodiments of the present invention will hereinafter be described, by way of example, with reference to the accompanying drawings in which:

Figure 1 shows a front view of a cover unit of the invention;

Figure 2 shows a front view of a pushbutton switch assembly incorporating a cover unit as shown in Figure 1; and

Figure 3 shows a section taken along line A-A of Figure 2 of the pushbutton switch assembly indicating its mounting on a housing face plate.

The drawings illustrate, and the present invention will be described, with reference to a pushbutton switch assembly. However, it should be appreciated that the illuminable pushbutton member provided in the switch assembly may also be used as an illuminable indicator member. In this respect, to provide an illuminable indicator it is necessary only to fix the illuminable indicator member relative to a housing and/or a housing face plate.

The electrical pushbutton switch assembly shown in the drawings is specifically designed for use in lifts but, of course, may be used in any situations where pushbutton operation is required.

The pushbutton switch assembly has a pressel or face plate 10 of metal carrying indicia 12 and braille symbols 14. This face plate 10 is fixed to a body member 16 (Figure 3) of translucent plastics material which is shaped and sized to define a rim 30 of translucent material surrounding the face plate 10. In the switch assembly, the translucent rim 30 is defined between the face plate 10 and a metal rim 32 carried by a switch cover 34. The rim 30 provides the well known halo effect when an LED assembly 20 is illuminated. In this respect, and as is apparent in Figure 3, a rear surface 18 of the translucent body member 16 is provided with serrations to diffuse the light.

In use of the switch assembly, the cover unit comprised of the face plate 10 and its affixed body member 16 is mounted for reciprocal movement within the switch assembly in known manner. The switch cover is fixed onto the switch assembly whereby the translucent rim 30 around the face plate 10 is defined. The switch assembly is then fixed relative to a housing face plate 40 as is indicated in Figure 3.

The details of the construction of the switch assembly, and the manner in which it is fixed in use, are not part of the present invention and will not be

further described herein. The switch assembly may be constructed, and may be mounted in use, in any suitable manner apparent to those skilled in the art.

To facilitate understanding of the indicia 12 and the braille symbols 14, they are embossed in the material of the metal face plate 10 so that they project and stand proud thereof. In addition, and as is indicated in Figure 1, the embossed indicia 12 are slotted as indicated at 22. These slots 22 define the same symbol as that of the corresponding indicium 12. The translucent material of the body member 16 is moulded to fill the slots 22. It will therefore be appreciated that when the LED assembly 20 is illuminated, as well as the halo 30, the slots 22 in the indicia 12 will also be illuminated. This is of great assistance to the partially sighted.

The translucent material within the slots 22 is moulded with the body member 16 to be in the same plane as the external plane of the embossed indicia 12. This means that the remaining embossed metal of the indicia 12 protects the translucent material and hence retains the vandal resistant nature of the device. The translucent material is similarly protected from wear and chipping.

It would be possible, for example, to illuminate the translucent material within the slot 22 at all times. When the pushbutton is pressed to call a lift, for example, the degree of the illumination or the colour of the illumination can be changed to register a call.

The enhanced visibility of the indicia 12 provided by the construction of the present invention is obtained with very little alteration necessary to the normal manufacturing process for the cover unit comprised of the face plate 10 and its affixed translucent body member 16. Thus, the face plates are pressed from metal strips and the appropriate indicia and braille symbols are then embossed thereon. Then the slots 22 required are laser cut. Next, the face plate is received within an appropriate mould which is configured to receive the embossed indicia. The translucent body member 16 is then moulded. In the moulding process, the body member 16 is affixed to the face plate 10 and the halo rim 30 is defined. During this moulding process, the plastics material of the body member is received within the slot 22.

It will be appreciated that modifications and variations in the embodiments as described and illustrated may be made within the scope of this application.

CLAIMS

1. A cover unit for an illuminable indicating device, said cover unit comprising a metal face plate affixed to a translucent body member, wherein at least one indicium is formed in said face plate to project with respect thereto, and wherein the metal of the indicium is slotted or gapped, material of said translucent body member being received within the slots or gaps.

2. A cover unit as claimed in Claim 1, wherein material of the translucent body member fills all of the slots or gaps within the indicium so that the outer surface of the indicium is smooth.

3. A cover unit as claimed in Claim 1 or Claim 2, wherein the slots or gaps in the indicium define the same mark or sign as the indicium.

4. A cover unit as claimed in any preceding claim, wherein the slots or gaps are continuous.

5. A cover unit as claimed in any preceding claim, wherein the or each indicium is embossed in the face plate.

6. A cover unit as claimed in any preceding claim, wherein the translucent body member is shaped to define a translucent rim around the periphery of the face plate.

7. A cover unit as claimed in any preceding claim, wherein the indicia carried by the face plate comprise arrows, letters or numbers.

8. An illuminable indicating device comprising a cover unit as claimed in any preceding claim.

9. An illuminable indicating device as claimed in Claim 8, wherein the cover unit is fixed in a metal surround to provide an indicator.

10. An illuminable indicating device as claimed in Claim 8, wherein the cover unit is incorporated in a pushbutton switch, with the metal face plate forming the pressel of the pushbutton switch.

11. A method of forming a cover unit for an illuminable indicating device, the method comprising the steps of forming at least one projecting indicium in a metal face plate, cutting the indicium to form slots or gaps therein, and then moulding a translucent material to form a translucent body member affixed to the face plate such that the material of the translucent body member is received within said slots or gaps.

12. A method as claimed in Claim 11, wherein the or each indicium is embossed in the metal face plate.

13. A method as claimed in Claim 11 or Claim 12, wherein the slots and/or gaps are laser cut in the indicia.

14. A method as claimed in any of Claims 11 to 13, further comprising the steps of receiving the metal face plate with the slotted or gapped indicia within a mould, and then moulding the translucent material to form the body member.

15. A cover unit for an illuminable indicating device substantially as hereinbefore described with reference to the accompanying drawings.

16. An illuminable indicating device substantially as hereinbefore described with reference to the accompanying drawings.

17. A method of forming a cover unit for an illuminable indicating device substantially as hereinbefore described with reference to the accompanying drawings.

The Patent Office

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Application No: GB 9706462.0 **Examiner:** Monty Siddique
Claims searched: 1-17 **Date of search:** 27 June 1997

Patents Act 1977
Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.O): B5A (AA2, AB1(Selectively), AB19, AB3, AC(Selectively)); H1N (NPW, NWA)

Int Cl (Ed.6): B29C 45/14 70/72 70/76; B29D 19/00 31/00; H01H 9/16 9/18

Other: Online: WPI

Documents considered to be relevant:

Category	Identity of document and relevant passage		Relevant to claims
Y	GB 2279915 A	(SHIN-ETSU) entire document	1,11 at least
X	GB 2278238 A	(DEWHURST) page 10 lines 22-26 etc.	1,11 at least
Y	GB 2004492 A	(POLYPLASTICS) entire document	1,11 at least
Y	GB 1593031	(POLYPLASTICS) entire document	1,11 at least
X	EP 0580082 A1	(PRIESEMUTH)	1 at least
Y	US 5359165	(EATON...)	1,11 at least
A	WPI Abstract Accession No. 91-246640/199134 & DE 4006649C (SCHUSTER...) 22.08.91 (see abstract)		1,11
A	WPI Abstract Accession No. 83-735996/198333 & DE 3203947 A (HANESCH) 11.08.83 (see abstract)		1,11

X Document indicating lack of novelty or inventive step
Y Document indicating lack of inventive step if combined with one or more other documents of same category.
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